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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/524,208	WATANABE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hongmin Fan	2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/21/2007.
2. ☐ The allowed claim(s) is/are 7,9,11 and 12.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date <u>12/15/2006</u> <u>2/10/05</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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**DETAILED ACTION*****Examiner's response***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Allowable Subject Matter***

Claims are allowed 7, 9 and 11-12. The following is an examiner's statement of reasons for allowance: Prior art fails to show an obstacle detection device to be mounted on a vehicle for detecting and displaying an obstacle in a vicinity of the vehicle, the device comprising: an obstacle detection section for emitting beams having a predetermined divergence angle consecutively in a plurality of different directions, and for each direction, receiving a reflected wave from an obstacle and detecting the obstacle existing within an emission angle range of the beam for the direction; a distance calculation section for calculating, for each direction, a distance representative of an interspace between the obstacle and the vehicle based on a received signal of the reflected wave; an obstacle image creation section for creating, for each direction, an obstacle image as a figure two-dimensionally developed in the emission angle range of the corresponding beam while treating, as a basis for image creation, the distance calculated by the distance calculation section for the direction, and for creating and outputting image data for displaying the obstacle image; and a display section for receiving the image data created by the obstacle image creation section and displaying an image showing a positional relationship

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between the obstacle and the vehicle, wherein, for each direction, the obstacle image created by the obstacle image creation section is an arc figure whose center is an emission point of the beams and whose radius is the distance calculated by the distance calculation section for the direction, and wherein, (1) for each direction, the obstacle image creation section changes a thickness of the arc figure as the obstacle image in accordance with the distance calculated by the distance calculation section for the direction; or (2) wherein, for each direction, the obstacle image created by the obstacle image creation section is an elliptical figure, end points of whose major axis coincide with end points of the arc locus; or (3) while treating as a base figure the figure having an area created for each direction, the obstacle image creation section further determines as the obstacle image an entire figure obtained by joining all base figures in order of direction with line segments joining end points on one side of the arc loci contained in the base figures and with line segments joining end points on the other side of the arc loci contained in the base figures; and wherein an inside of the entire figure is divided into parts based on a distance from the emission point of the beam beams, and the image data is created such that adjacent parts obtained by the division have a gradual difference in brightness; or (4) for each direction, the obstacle image creation section further treats, as a representative location of the obstacle, a point apart from the emission point of the beam beams by the distance calculated by the distance calculation section for the direction, the point being in a central direction of the emission angle range of the beam emitted in the direction, and wherein the obstacle image creation section further

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creates image data of a kinked line joining the representative locations in order of direction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hongmin Fan whose telephone number is 571-272-2784. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Hofsass can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HF



JEFFERY HOFSASS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600